

REMARKS

A final Office Action was mailed on October 6, 2003. Claims 1 – 28 are pending in the present application. Claim 27 is amended. No new matter is introduced.

REJECTION UNDER 35 U.S.C. § 103

Claims 1 - 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,418,558 to Roberts et al. in view of U.S. Patent No. 6,473,428 to Cioffi et al.. Applicants amend claim 27 to insert an unintentionally omitted portion of a claim limitation term, and respectfully traverse this rejection.

In independent claims 1, 2, 5, 15 and 25 – 28, Applicants disclose a communication system and method for processing messages in the communication system, where the communication system includes a plurality of subscriber-side units manufactured by different vendors as well as a station-side unit that accommodates the various subscriber-side units and is capable of communicating with all of the subscriber-side units by broadcast messages.

In accordance with Applicants' claimed method, the station-side unit broadcasts to all of the subscriber-side units a group designating message produced by a group designating message generating unit of the station side unit. The group designating message includes designation information that designates a subset of the plurality of the subscriber-side units as a component constituting a group of units which are to receive a broadcast message (for example, all units manufactured by a single vendor).

A state control unit in each subscriber-side unit operates to receive the group designating message broadcast by the station-side unit to all of the subscriber-side units.

Each state control unit generates a status in response to receipt of the group designating message, and produces a valid status only if the associated subscriber-side unit is one of the designated subset of subscriber-side units. The subscriber-side unit will then terminate (i.e., receive and process) group specific messages other than the group designating message only if the state control unit has assigned a valid status.

Roberts discloses a hybrid fiber/coax video and telephony communication system including a station side unit 32 and a plurality of subscriber side units 540 (see, e.g., FIG. 96 of Roberts). As acknowledged by the Examiner, Roberts fails to disclose Applicants' claimed state control unit (as well as, for that matter, Applicants' group designating message generating unit). However, the Examiner maintains that Applicants' state control unit is obvious in light of the communications control means for identifying remote units that is disclosed by Roberts.

Roberts discloses a channel manager 900 that monitors channels and re-assigns subbands reallocation links between a head end 32 and ISUs 100 (see, e.g., column 112, lines 42 – 51 of Roberts). The Examiner has noted previously that Roberts is thereby able to selectively transmit to fewer than all ISUs 100, and equates this capability with Applicants' claimed status control of subscriber-side units having a valid status. Applicants respectfully disagree.

Applicants claim a communication system and method in which a group designating message is broadcast to all subscriber-side units in order for a valid status to be assigned at each of a predetermined subset of subscriber-side units belonging to the group. From this point forward, as group specific messages continue are broadcast to all subscriber-side units by the station-side unit, only those subscriber-side units belonging

to the group and having a valid status set are able to receive and process the broadcast messages (see, e.g. page 48, line 5 through page 49, line 10 of Applicants' specification).

In sharp contrast to Roberts, Applicants communication system does not employ a dedicated channel manager for assigning subbands to individual subscriber-side units in order that messages may be sent on a selected set of subbands to a limited number of subscriber-side units. Rather, Applicants teach a method and system in which communications are transmitted in a full broadcast mode by the station-side unit, and control is exercised by the individual subscriber-side units rather than centrally by a dedicated channel manager or similar device. The Examiner acknowledges that Roberts fails to teach Applicants' claimed means for broadcasting communications from the station-side unit, and suggests that Cioffi teaches or suggests such broadcast means. Applicants' respectfully disagree.

Cioffi teaches a bi-directional data transmission including a plurality of remote units and a central unit, the central unit being capable of sending a synchronization signal to each of the remote units that contains one or more of global, group and nodal addresses (see, e.g., column 15, lines 16 – 43 of Cioffi). In sharp contrast to the approach claimed by Applicants, Cioffi teaches assigning groups of remote units each to individual, independent sub-channels operating at different frequencies (see, e.g., column 7, line 59 through column 8, line 55). Thus, while Cioffi does teach communications over a single sub-channel to each remote unit on the sub-channel (i.e., Cioffi's group), unlike Applicants' claimed invention, Cioffi does not teach transmitting a group designating message for designating a group of remote units among all of the remote units on the channel.

In addition, like Roberts, Cioffi fails to teach or suggest Applicants' claimed state control unit in each subscriber-side unit for generating a valid reception status upon receipt of a group designating message having designation information designating the subscriber-side unit, and for terminating (i.e., receiving and processing subsequent group specific messages other than the group designating message only if the state control unit has generated a valid status. Unlike Applicants' claimed subscriber-side units, the remote units of Cioffi each operate to individually synchronize with the central unit in order to perform a number of individual bi-directional communications (i.e. multi-point to point communications) between the individual remote units and central unit rather than broadcast (point to multi-point) communications between the central unit and a group of remote units.

In comparison to the cited art, Applicants' approach provides advantages by eliminating the added control apparatus, cost and complexity required to manage sub-channels, and provides for simpler and more flexible designation of groups of subscriber-side units. Applicant's claimed approach also eliminates the need for the station-side unit to administer and assign a complex scheme of global, group and nodal addresses. It is particularly well-suited, for example, for implementing the passive optical network (PON) embodiment disclosed in Applicants' FIG. 1.

Accordingly, Applicants respectfully submit that Applicants' invention as disclosed in independent claims 1, 2, 5, 15 and 25 - 28 is not made obvious by Roberts and Cioffi, either alone or in combination, and therefore that 1, 2, 5, 15 and 25 - 28 stand in condition for allowance. As claims 3, 4, 6 - 14 and 16 - 24 each depend from one of


allowable claims 1, 2, 5, 15 and 25 - 28, Applicants respectfully submit that claims 3, 4, 6 - 14 and 17 - 24 also stand in condition for allowance for at least this reason.

CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 1 - 28, which include independent claims 1, 2, 5, 15 and 25 - 28, and the claims that depend therefrom, stand in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,



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